PACIFIC UNDERGRADUATE RESEARCH AND CREATIVITY CONFERENCE

Title: Are Skull-Vibrations Causing High Frequency Artifacts in Membrane Measurements of the Túngara Frog (Engystomops pustulosus)?

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Abstract

Two studies in our lab characterized the middle ear tuning of the túngara frog (*Engystomops pustulosus*). Both showed that adult females are tuned to 2-3 kHz. Some measurements also revealed a significant response at frequencies much higher than the general trend of 2-3 kHz, at around 10-14 kHz. These high frequency outliers could be an artifact derived from whole-head vibrations. In this experiment, we repeated the measurements and compared them to control measurements of the skull vibration in response to sound. The goal was to quantify the spectrum of skull vibrations and validate or adjust our previous experiments. Our preliminary data indicate that there is not a significant response due to whole-head vibrations, and that the frequencies characterizing female middle ear tuning in our previous studies remain consistent with our current data collection. This allows us to rule out whole-head vibrations as a factor affecting characteristic frequencies and set up further experimentation to study the high frequency responses.